

REMARKS

Claims 12 through 14 stand rejected in the Office Action. Claim 13 has been cancelled, claims 12 and 14 have been amended, and new claims 15 and 16 have been added. Upon entry of the amendments, claims 12 and 14 -16 remain pending in the application.

Support for amended claim 12 is found in the specification and claims as originally filed, for example, in claim 13, now deleted. Support for claims 15 and 16 is found in the specification as filed, for example, in Table 1 on page 34. Applicants respectfully request entry of the amendments.

Rejections Under 35 U.S.C. § 112

Claims 13 and 14 stand rejected as being indefinite because they appear to be dependent on cancelled base claims. Applicants have cancelled claim 13, and amended claim 14 to reflect the proper dependency. Accordingly, Applicants respectfully request that the rejection be withdrawn.

Rejection Under 35 U.S.C. § 102 and § 103

Claims 12 through 14 stand rejected under 35 U.S.C. §102(a) or in the alternative under 35 U.S.C. §103 in view of Ryan, WO98/50611 (the Ryan reference). The Office Action states Applicants' characteristics would be inherent in the reference's nonwoven material, because values of birefringence and shrinkage overlapping those of the claims are disclosed in the reference, and a drafting speed disclosed by Applicants to be critical to obtaining those characteristics is used in Example 1 of the Ryan reference.

The Examiner states basis exists for shifting the burden to Applicant to show Applicants' characteristics are not inherent. In response, Applicants have amended the claims to recite a spun bonded fabric. Applicants respectfully traverse the rejection as applied to the amended claims and request reconsideration.

Applicants' characteristics are not inherently disclosed in the Ryan reference in Example 1. Example 1 is a melt spinning process, while the amended claims are drawn to a spun bonded fabric. In the spun bonded non-woven fabric of the amended claims, the supercool index, filament birefringence, and crystalline size are determined by drafting stress during melt spinning. The drafting stress is affected not only by drafting speed, but by other parameters unique to the process. Even if a melt-spinning process (as in Ryan) and a spun-bonding process have the same drafting speed, it is known that the filaments are subjected to larger drafting stress in the melt-spinning process. It would not be expected that Applicants' characteristics would be inherently present in the melt spun filament of Ryan's Example 1.

The differences inherent in melt-spinning and spun-bonding may be illustrated with reference to Figure 1 of Ryan (a melt-spinning process) and Ryan's Figure 2 (a spun-bonding process). In the melt-spinning process (Fig. 1 of Ryan), the distance from a spin pack 58 to a roll shaped lube applicator 64 of the spinning machine is generally longer than that from a spinneret 76 to an air gun 80 in a spun bonding process (Fig. 2 of Ryan). This is because the air gun 80 is weaker than the roll-shaped lube applicator 64 in filament holding force; therefore, it is necessary to lessen the air resistance of the running filaments so that the air gun can secure a pre-determined holding force. In other words, the distance from the spinneret 76 to the air gun 80 needs

to be shortened. In this connection, the Ryan reference indicates in Example 1 that the spinline length was approximately 3 meters (page 42, line 30). In a typical spun bonding process, the length is normally about half that. Thus, even if the drafting speed is the same, the stress on the filaments is inherently higher in the melt-spinning process.

In light of the discussion above, Applicants believe they have met their burden to show with respect to the amended claims, that Applicants' characteristics are not inherently present in the fabric of the Ryan reference. Accordingly, Applicants respectfully request that the rejection under § 102 be withdrawn.

The Ryan reference teaches away from using drafting speeds in a spun bonded process disclosed to be critical for achieving the claimed characteristics. In Ryan, only Example 13 refers to a spun bonded, non-woven fabric like that of the claims. In Example 13, the drafting speed is 5,000 meters per minute. This is even higher than in comparative Example 2 of the present application, which is shown at page 34, table 1 to have characteristics outside the claimed ranges. This indicates that the filament of Example 13 of Ryan is subject to a large drafting stress, making it impossible to satisfy the ranges of the supercool index, birefringence, and polymer crystalline size of the constituent filaments as defined in the amended claims. A person of skill in the art would not, on the basis of the disclosure of the Ryan reference, be motivated to modify its disclosure by perhaps using a lower drafting speed to create a spun bonded, non-woven fabric having Applicants' characteristics. For this reason, Applicants respectfully submit that the claimed invention would not have been obvious over the Ryan reference. Accordingly, Applicants respectfully request that the rejection under § 103 over the Ryan reference be withdrawn.

CONCLUSIONS

For the reasons discussed above, Applicants believe that claims 12, and 14-16 are in an allowable condition, and respectfully request an early notice of such allowance. The Examiner is invited to telephone the undersigned if that would be helpful to resolving any matter.

Respectfully submitted

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ATTACHMENT FOR CLAIM AMENDMENTS

The following is a marked up version of each amended claim in which underlines indicates insertions and brackets indicate deletions.

12. (Amended) A thermoformable nonwoven fabric composed of filaments of a biodegradable polymer, wherein

the biodegradable polymer is selected from the group consisting of poly-D-lactic acid, poly-L-lactic acid, copolymers of D-lactic acid and L-lactic acid in which the copolymerization molar ratio of either one of D-lactic acid and L-lactic acid is 90% or more and that of the other is 10% or less, and blends of any of these polymers,

the nonwoven fabric is a spun bonded nonwoven fabric,

the filaments have a polymer supercool index of 0.3 to 0.6,

the filaments have a birefringence of 3×10^{-3} to 15×10^{-3} , [and]

the filaments have a polymer crystalline size of 15 to 20 Å as measured axially thereof; and

the nonwoven fabric has a boiling water shrinkage percentage of 10 to 40%.

14. (Amended) A nonwoven fabric as set forth in claim [1] 12, wherein the polymer contains a nucleating agent.